6. OPERATIONS AND MAINTENANCE

Implementation of the tasks identified in **Chapter 5** is dependent upon the availability of additional staff and budget for the NSMWA, and the establishment of an adequate operations and maintenance budget. This chapter addresses staffing and other resources required to perform the operations and maintenance associated with this LMP.

6.1 OPERATIONS AND MAINTENANCE TASKS TO IMPLEMENT PLAN

Table 6-1, at the end of this chapter, summarizes goals and tasks identified in **Chapter 5** and the labor hours (annual) required to implement them. **Table 6-1** does not include hours for seasonal and temporary staff. Hours listed in the table are approximate and subject to change. The table is intended to be a guide for implementation of the LMP.

6.2 EXISTING STAFF AND ADDITIONAL PERSONNEL NEEDS

The NSMWA is currently staffed by three full time employees dedicated to the NSMWA, with one supervisory staff that oversees the NSMWA and other wildlife areas.

6.2.1 Existing Staff

6.2.1.1 Senior Biologist Supervisor (Wildlife)

The Senior Biologist Supervisor is assigned to multiple wildlife areas. This position serves as the following:

- Representative for the NSMWA with elected officials, local events and media.
- Procurement of funding for future activities.
- Supervision of all NSMWA employees.
- Budget planning and management, grant proposal preparation, contract management.
- Writing articles for newsletter and local media; Presentation of public programs to a variety of audiences.
- Representative of NSMWA working with various governmental agencies and non governmental organizations.

6.2.1.2 Associate Wildlife Biologist

This individual serves as the co-manager of the NSMWA, performing technical tasks and assist in providing direction to maintenance staff. The associate wildlife biologist has the principal responsibility for implementation of this Plan.

- Cooperatively manage (with existing NSMWA staff) and coordinate wetland restoration activities and project development efforts on DFG north bay lands including the Napa-Sonoma Marshes, Petaluma Marsh, and San Pablo Bay Wildlife Area, ecological reserves, and future acquisitions within Napa, Sonoma, Solano, and Marin Counties. Responsible for project management for the restoration of former Cargill Salt ponds and plant site and other restoration projects. Represent DFG's interests and projects at meetings.
- Develop area management plans, MOUs with various agencies, and recommendations for changes to the NSMWA management and hunting regulations. Assist in obtaining outside funding and write grant applications. Develop capital outlay and other habitat development projects and RFP's, administer contracts, oversee purchases, and conduct other tasks associated with wildlife area and lands management.
- Write and obtain regulatory permits for restoration and other projects on north bay DFG lands. Develop and review a wide range of environmental documents.
- Develop resource assessment needs, monitoring and biological study plans and adaptive management plans. Assist in collection of biological and GPS data on fish and wildlife populations and habitats. Conduct monitoring and surveys to maintain compliance requirements for adaptive management plans, regulatory permits, and grant stipulations.
- Respond to routine public inquiries about wetlands and wildlife management. Participate in regional wildlife management phone duties and other public contacts. Give talks to and participate in public functions. Participate in, enhance existing, and develop new hunting and other wildlife dependant opportunities on DFG lands.
- Perform program administrative duties such as supervising seasonal employees, preparing timesheets and work plans, maintaining vehicles, budgeting, and purchasing of minor equipment.

6.2.1.3 Wildlife Habitat Supervisor 1

One full time Wildlife Habitat Supervisor (1) is assigned to the NSMWA. This position has the following responsibilities:

- Lead person for field staff.
- Oversee operation and maintenance of heavy equipment, facilities, boats, vehicles, structures, pumps, roads, levees and ponds in the NSMWA.
- Procurement of supplies and equipment.
- Planning of field activities.
- Assist in design of restoration projects.
- Coordinate with the Solano, Marin-Sonoma and Napa Mosquito Abatement Districts, PG&E, local utility districts, local and state fire departments, local flood control and

sanitation districts, resource conservation districts and numerous private adjacent landowners and ranchers.

- Contract administration.
- Monitor weeds.
- Assist in posting boundaries, hunting areas and hazards in the NSMWA.

Fish and Wildlife Technician

The Fish and Wildlife Technician is responsible for the following tasks:

- Boat, tractor, and heavy equipment operation and maintenance.
- Assist in maintaining water control structures and pump houses, assisting in posting, erecting fences and maintaining signage in the NSMWA.
- Assists in maintenance of residences and structures, and minor electrical, plumbing and carpentry work.
- Assists in filing and phone work at the direction of the Associate Wildlife Biologist and Wildlife Habitat Supervisor.

Seasonal Scientific Aid

The Seasonal Scientific Aid is responsible for the following tasks:

- Assist with the preparation and writing of: Desalinization plans, restoration plans and permits, updating of management plan.
- Collect and analyze water quality data from salt ponds, sloughs, and surrounding rivers, creeks, and wetlands. Use of electronic instruments and gauges in river/slough environments from boat and land access points.
- Collect biological data on wildlife, fish, and plant populations and habitats within the Marshes. May include:
  - Mapping (GPS), direct observations, trapping, operating check stations, creel census, photo stations, aerial surveys, and other methods as deemed appropriate.
  - Typing memos, letters, reports, tables, and forms; know or able to learn Windows based programs.
- Assist in responding to public information requests received via telephone, written, and in person.
- Filing and organizing of office materials, copying, upkeep of databases and other routine paperwork.
- Maintenance of miscellaneous vehicle and field equipment.

- Assist with minor carpentry, electrical, plumbing, painting, fencing, and cement work projects; posting of wildlife area, litter removal, exotic plant removal, planting native vegetation, and operating water control structures.

6.2.2 Proposed Staff

In addition to the existing staff assigned to the NSMWA, several additional staff will be needed in order to implement the LMP. Additional staff includes a Wildlife Biologist, Tractor Operator/Laborer, Fish and Wildlife Habitat Assistant and an additional Fish and Wildlife Technician.

Wildlife Biologist

The Wildlife Biologist would report to the Associate Wildlife Biologist for the NSMWA, and would be primarily responsible for:

- Conducting sensitive plant and wildlife surveys
- Completing an inventory of all plant and wildlife species in the NSMWA
- Mapping invasive plants
- Assist in planning of habitat construction and maintenance activities
- Coordination of scientific research in the NSMWA and tracking of research conducted in the NSMWA by outside entities.

Tractor Operator/Laborer

The tractor/operator would be responsible for the following tasks:

- Operate large equipment for disking, mowing, road grading, levee maintenance, pipe installation, ditch excavation, planting crops and building levees.
- Operate commercial vehicles.
- Coordinate and perform routine repair and maintenance of equipment and commercial vehicles.
- Perform water management activities in the Napa-Sonoma Marshes Wildlife Area and Petaluma Marsh Wildlife Area.
- Operate and maintain small tools and equipment such as pumps, motors, hand tools, portable welders, etc.
- Assist other Wildlife Area staff in other duties for the NSMWA and other DFG lands as needed.

Fish and Wildlife Habitat Assistant

Under the direction of the Wildlife Area Manager, the Fish and Wildlife Habitat assistant would perform habitat and facilities maintenance and development activities in the NSMWA. The Fish and Wildlife Habitat Assistant would be responsible for the following tasks:

- Perform daily wildlife and habitat management, maintenance, vehicle and equipment operation (including tractors and heavy equipment), construction and public use activities on the NSMWA. This includes such activities as maintenance of ponds, levees, and roads; water management; water quality management; habitat improvement and restoration work; noxious weed species control; surveys; and vehicle and equipment maintenance.
- Coordinate flooding, draining and irrigating of habitats with the County Mosquito Abatement District.
- Direct a field crew of permanent and temporary staff in performing daily management activities.
- Develop annual work plans.
- Direct temporary staff in the hunter checks station operations. Collect public use data and report it in written form.
- Perform daily monitoring, repair and maintenance of water discharge pumps and fish screens.
- Perform tasks such as carpentry, plumbing and painting to maintain buildings, grounds and facilities in the NSMWA.
- Obtain and maintain herbicide applicator license.

6.3 OPERATIONS AND MAINTENANCE

An operations and maintenance budget will be required to provide materials and supplies (office supplies, fuel, etc.) and additional labor (as previously described) to support management. This budget also will need to include costs of vehicle maintenance, small tools and materials for facilities maintenance (e.g., replacement signs), herbicides for control of invasive species, garbage disposal fees, etc. Costs for materials and supplies can be relatively large for some tasks, such as the removal of abandoned structures or eradication of extensive invasive plant infestations; therefore, these tasks may be budgeted separately as capitol improvement or habitat restoration projects, and not included in the general materials and supplies budget for the NSMWA.

6.4 FUNDING SOURCES

Several funding sources are available for capitol improvements, and restoration and enhancement projects within the NSMWA. These funding sources potentially include:

- USFWS Programs (e.g., State Wildlife Grant Program, Federal Aid in Wildlife Restoration Program)
- State Duck Stamp Program
- Neotropical Migratory Bird Conservation Act Grants Program
- Department of Fish and Game programs (e.g., Comprehensive Wetlands Program)
- Department of Fish and Game Minor/Major Capital Outlay and Deferred Maintenance proposals
- Programs authorized under future bond acts
- North American Wetlands Conservation Act (NAWCA)
- California Coastal Conservancy
- Wildlife Conservation Board
- San Francisco Bay Joint Venture
- Army Corps of Engineers
- Ducks Unlimited
- Private foundations

Table 6-1. Operations and maintenance requirements (hours by staff position) to implement plan.

Element	Goal	Tasks	Sr Bio Supv WL	Assoc WL Bio	WL Hab Supv	Fish WL Tech	WL Bio	Tract Oper/ Labr	Fish WL Hab Asst
Biological Element									
Special-status species	Bio Goal 1: Maintain, enhance, and increase habitat for endangered, threatened, rare, and sensitive plant, fish, and wildlife species.	Conduct baseline surveys of special-status species with potential to occur in the NSMWA..	16	120	120	—	120	—	20
		Develop a comprehensive monitoring program for known special-status species populations to detect change in distribution and abundance, and to detect effects of management activities, public uses, and non-native species.	16	80	24	—	60	—	—
		Develop guidelines for protecting special-status bat species habitat in the NSMWA.).	16	60	32	—	24	—	16
		Research reintroduction potential for special-status species in suitable habitats in NSMWA.	4	20	60	—	40	—	—
Non-native Invasive Species	Bio Goal 2: Minimize the introduction and spread of non-native invasive species that potentially have negative impacts on native plant or wildlife species.	Inventory habitats for invasive plant infestations and map the infestations (e.g., perennial pepperweed, cordgrass, tall reed [*Arundo dona*], yellow star thistle).	8	20	40	—	140	—	20
		Coordinate with existing non-native species monitoring and eradication programs, particularly the Invasive Spartina Project for the monitoring and management of non-native invasive cordgrass species, and USFWS for perennial pepperweed control.	4	32	20	—	40	—	8
		Prioritize infestations for control treatment. Prioritization will be based on such factors as size of infestation, location, condition of habitat, and adjacent land use.	8	30	20	—	40	—	—
		Manage and control invasive species through integrate pest management (rotational grazing, prescribed burn, pesticide application, and mechanical removal).	20	30	60	80	100	80	80

Table 6-1. Operations and Maintenance Requirements (hours by staff position) to Implement Plan

Element	Goal	Tasks	Sr Bio Supv WL	Assoc WL Bio	WL Hab Supv	Fish WL Tech	WL Bio	Tract Oper/ Labr	Fish WL Hab Asst
Wetland Habitat	Bio Goal 3 (Seasonal and Perennial Wetlands and Tidal Marsh Habitat): Maintain and enhance habitat for resident and migratory birds, as well as mammal, amphibian, and reptile species.	Identify restoration opportunities in the NSMWA. Evaluate the constraints and benefits for each potential project, and prioritize list.	26	40	30	–	100	—	20
		Pursue funding opportunities for identified restoration opportunities in the NSMWA.	200	60	20	–	–	–	20
		Provide a diversity of habitats for wildlife species in the NSMWA, including many species of waterfowl, raptors, passerines, shorebirds, and mammals.	20	100	32	–	60	–	100
		When considering restoration sites and designs, maximize synergy with adjacent wetland projects (e.g., City of American Canyon tidal and treatment wetlands, Cullinan Ranch and Napa County Flood Control District lands).	**40**	**80**	**32**	**–**	**–**	**I**	**40**
		Use locally collected native plants in the design of restoration projects. Many seed and propagule sources for native plants are present in the NSMWA.	**20**	**40**	**40**	**40**	**20**	**–**	**120**
		Develop and implement projects that would be consistent and compatible with the applicable Napa County Airport Safety Compatibility Zones and FAA advisory guidelines related to bird-strike hazards	**40**	**40**	**20**	**–**	**–**	**–**	**–**

Table 6-1. Operations and Maintenance Requirements (hours by staff position) to Implement Plan

Element	Goal	Tasks	Sr Bio Supv WL	Assoc WL Bio	WL Hab Supv	Fish WL Tech	WL Bio	Tract Oper/ Labr	Fish WL Hab Asst
Wetland Habitat	Bio Goal 4 (Managed Former Salt Pond Habitat): Improve the ability to manage water levels and salinity levels in managed ponds to maximize feeding and resting habitat for migratory bird and resident waterfowl	Repair or replace water control structures to ensure effective control of water levels and salinity level.	**20**	**80**	**100**	**200**	**—**	**200**	**60**
		Monitor water quality of the managed ponds to ensure salinity reduction process is adequate and dissolved oxygen concentrations support aquatic life.	**16**	**40**	**100**	**100**	**—**	**20**	**80**
	Bio Goal 5 (Managed Former Salt Pond): Minimize contaminant risks from salt pond restoration	Minimize mobilization of potential contaminants, such as methylmercury, in sediments to the extent possible.	**16**	**40**	**20**	**40**	**I**	**40**	**60**
		For the Napa Plant Site, restore tidal circulation when Cargill has completed harvest operations and consistent with BCDC permit, RWQCB waste discharge requirements, and the USACE permit.	16	80	60	40	—	20	20
Upland and Riparian Habitat	Bio Goal 6: Restore and enhance grassland and upland communities to conditions that provide desire ecological conditions and support diversity and abundance of plant and wildlife species	Identify feasible grassland and upland restoration projects.	8	60	40	6	40	—	—
		Prioritize potential grassland and upland restoration projects.	8	40	20	—	32	—	—
		Pursue funding and develop plans for identified grassland and upland projects. Proposals for obtaining funds should include goals, techniques, costs, monitoring, and adaptive management. Pursue funding through partnerships when appropriate	100	80	20	—	8	—	—
	Bio Goal 7 (Riparian Habitat): Maintain and enhance riparian habitat to conditions that provide desired ecosystem benefits, including improved wildlife habitat and increased bank stability	Evaluate opportunities, constraints, and potential restoration benefits for riparian restoration in the NSMWA.	8	60	20	—	32	—	—
		Prioritize potential riparian restoration sites in the NSMWA. Based on information collected under Task 1, riparian restoration projects should be prioritized based on the significance of the site and potential loss or degradation of habitat.	8	60	20	—	20	—	—

Table 6-1. Operations and Maintenance Requirements (hours by staff position) to Implement Plan

Element	Goal	Tasks	Sr Bio Supv WL	Assoc WL Bio	WL Hab Supv	Fish WL Tech	WL Bio	Tract Oper/ Labr	Fish WL Hab Asst
Upland and Riparian Habitat	**Bio Goal 7 (cont.)**	Pursue funding and develop plans for identified riparian restoration projects. Proposals for obtaining funds should include goals, techniques, costs, monitoring and adaptive management.	60	100	—	—	—	—	—
		Maintain previously restored riparian areas at Huichica and American Canyon Creeks.	8	20	20	40	40	—	100
Aquatic Ecosystems	Bio Goal 8 (Aquatic Ecosystem): Maintain and enhance aquatic ecosystems for diversity and abundance of native and game fish and aquatic invertebrate species	Increase understanding of fisheries and aquatic invertebrates use of the NSMWA through expanded monitoring.	16	20	60	10	—	—	—
		Provide a greater diversity of aquatic habitats and improve existing habitat structure in tidal marshes of the NSMWA.	32	40	40	—	—	—	—
Public Use Element									
Authorized Public Use	PU Goal 1: Increase existing and provide new opportunities for low impact, wildlife-oriented uses that are compatible with wildlife and habitat goals.	Expand hunting opportunities as habitat and access are improved on restored sites and former duck club sites.	16	20	20	—	—	—	—
		Post hunting regulations at appropriate locations.	20	20	24	48	—	120	60
		Develop maps and signs that indicate fishing access points	32	20	20	48	—	—	60
		Post fishing regulations at appropriate locations.	20	20	24	48	—	60	60
		Create angling access points (e.g., potential for barge docks at Green Island Unit to provide angling access).	20	20	20	20	—	20	—
		Improve access roads and levees.	40	8	50	60	—	100	20
		Provide access for wildlife viewing at restored sites.	8	8	40	40	—	32	8
		Post additional interpretive wildlife sign at strategic locations.	8	8	16	16	—	40	8
		Provide opportunities for hand launched water craft (e.g., kayaks, canoes) in appropriate locations	8	8	16	42	—	40	8

Table 6-1. Operations and Maintenance Requirements (hours by staff position) to Implement Plan

Element	Goal	Tasks	Sr Bio Supv WL	Assoc WL Bio	WL Hab Supv	Fish WL Tech	WL Bio	Tract Oper/ Labr	Fish WL Hab Asst
Authorized Public Use	PU Goal 1 (cont.)	Coordinate with Bay Trail, Napa, Solano and Sonoma Counties and City of American Canyon to evaluate the feasibility to complete an alignment of the Bay Trail surrounding the northern and eastern boundaries of the Napa River and Huichica Creek Units.	32	24	32	24	24	—	—
		Create a brochure and updated map for the NSMWA.	8	8	20	40	60	—	80
		Design public access to minimize maintenance and patrolling.	16	8	12	20	—	—	20
	PU Goal 2: Support and expand public use of the NSMWA for environmental education and interpretation.	Develop interpretive signage and kiosks.	8	—	4	60	2	—	20
		Develop informative DFG website for NSMWA.	8	—	4	60	20	—	20
		Publicize and schedule interpretative walks or guided tours	4	—	4	60	60	—	80
		Coordinate with local schools for classroom field trips and other educational activities	4	—	20	40	40	—	4
		Develop self-guided tours of the NSMWA.	4	—	8	20	60	—	24
		Identify area(s) for a possible future interpretive/educational facility	32	20	20	20	60	—	40
	PU Goal 3: Encourage community partnerships	Coordinate with local non-profit groups that promote wildlife-dependent education and interpretation (e.g., Save the Bay, Bay Institute).	20	20	10	20	30	—	—
		Identify opportunities to partner with groups to implement habitat enhancement projects (e.g., waterfowl hunters, Acacia Winery).	20	16	16	16	20	—	8
		Identify opportunities to promote Earth day activities at NSMWA Management Units.	40	—	20	20	20	—	—
	PU Goal 4: Minimize competition and conflicts among users and facilitate compatibility between public uses.	Maintain and improve access roads, signs, restrooms, and other recreational facilities	8	—	4	40	20	300	32
		Inform the public of NSMWA use designations and use restriction through outreach, signage, and DFG's web site	16	—	4	60	20	40	60

Table 6-1. Operations and Maintenance Requirements (hours by staff position) to Implement Plan

Element	Goal	Tasks	Sr Bio Supv WL	Assoc WL Bio	WL Hab Supv	Fish WL Tech	WL Bio	Tract Oper/ Labr	Fish WL Hab Asst
Authorized Public Use	PU Goal 5: Evaluate requests by Native Americans for use of the NSMWA for traditional activities, such as gathering native plant materials for cultural purposes	Work with native peoples requests for access to the NSMWA. Determine the purpose and need for access and/or collections within the NSMWA, based on applicable laws and treaties related to tribal use of state properties	16	—	4	40	20	—	20
		Develop access plans and issue permits for native peoples that are compatible with the goals of the LMP. Any authorization for access would identify species, limits, locations, seasons, and include standard liability clauses.	16	20	20	20	—	—	20
Unauthorized Public Use	UPU Goal 1: Prevent unauthorized use of the NSMWA	Maintain adequate signage on boundaries of NSMWA, particularly at American Canyon, White Slough, and the Sonoma Creek Unit where dumping and vandalism are more common.	4	4	4	40	20	100	20
		Increase patrols of the NSMWA and enforce regulations that prohibit unauthorized uses.	8	—	—	—	—	120	—
		Prohibit activities that are inconsistent with the NSMWA mission, including ballooning (landing), windsurfing and equestrian use.	8	—	—	—	—	100	8
		Remove existing trash and other unwanted materials.	16	—	—	20	—	120	12
		Provide additional trash receptacles at strategic locations.	4			40		40	20
		Establish a regular monitoring and removal program of trash.	8	4	4	20	40	—	20
		Meet with local law enforcement agencies, including County sheriff, California highway patrol, to coordinate law enforcement activities and explore options for cooperative programs.	60	20	20	—	—	—	20
Agricultural Resources Element									
Agricultural Resources	AG Goal 1: Use agricultural techniques to maintain and enhance habitat for native and game wildlife and fish	Enhance grasslands and uplands through grazing, native grass plantings and other management techniques within upland areas of Huichica Creek, Ringstrom Bay, Wingo, Southern Crossing, and American Canyon Units.	8	4	8	20	120	60	80

Table 6-1. Operations and Maintenance Requirements (hours by staff position) to Implement Plan

Element	Goal	Tasks	Sr Bio Supv WL	Assoc WL Bio	WL Hab Supv	Fish WL Tech	WL Bio	Tract Oper/ Labr	Fish WL Hab Asst
Cultural Resources Element									
Cultural Resources	CR Goal 1: Catalog and preserve all significant prehistoric, historic-era, or present-day Native American cultural resources that are documented, and/or discovered, through field investigations within the NSMWA.	Maintain library of printed cultural resource reports from the project area and a ¼-mile vicinity.	8	—	—	—	40	—	20
		Conduct cultural resource surveys as necessary before significant ground-disturbing activities (e.g., excavations below normal plow depths) at undisturbed sites.	8	—	—	20	40	—	20
		Formally record and evaluate historic structures within the project area, such as the Napa-Sonoma Marshes field office complex at 2148 Duhig Road.	—	—	—	—	—	—	—
		Complete and submit site records to the State Historic Preservation Officer (SHPO) to establish and submit culturally significant resources that may be eligible for inclusion in the National Register of Historic Places (NRHP) or the California Register of Historic Resources (CRHR).	8	—	—	20	20	—	30
		When facility improvements or restoration efforts are proposed and may affect historical or archaeological resources, consult CEQA guidelines for guidance on compliance with regulations.	8	—	—	12	12	—	20
		Consult with the Native American Heritage Commission (NAHC) as appropriate.	8	—	4	—	—	—	20
		consult with the local tribe(s) as appropriate.	8	—	2	8	8	—	8
	CR Goal 2: Where appropriate, provide opportunities for on-site public interpretation of significant cultural resources.	Display NSMWA cultural resources information in interpretive signage at key locations.	4	—	4	20	—	20	—
		Coordinate with local tribe(s) for accurate information and input for interpretive signage	16	—	—	16	—	20	20
Facilities Maintenance Element									
Facilities Maintenance	FM Goal 1: Maintain or improve existing levels of flood protection	Identify, evaluate and set priorities for repair and replacement of water control structures and levees.	8	—	60	20	—	—	30
		Repair or replace water control structures and levees in order of priority	8	—	—	12	—	40	—
		Coordinate with adjacent landowners and county flood control districts regarding water management	60	—	20	8	—	—	—

Table 6-1. Operations and Maintenance Requirements (hours by staff position) to Implement Plan

Element	Goal	Tasks	Sr Bio Supv WL	Assoc WL Bio	WL Hab Supv	Fish WL Tech	WL Bio	Tract Oper/ Labr	Fish WL Hab Asst
Facilities Maintenance	FM Goal 2: Effectively manage existing facilities and equipment for resource protection, operations, and safe public uses.	Maintain gates and fences and water management infrastructure.	8	—	—	64	—	—	—
		Maintain signage that informs the public of the boundaries, laws, and regulations of the NSMWA.	8	—	—	20	—	40	—
		Start a monitoring and maintenance schedule for all signage. Replace signage as needed	8	—	20	—	—	20	—
		Regularly monitor the condition and use of existing facilities.	8	—	—	20	—	32	—
		Conduct preventative maintenance of facilities and structures.	8	—	—	20	—	24	—
		Maintain existing dirt and paved roads in the NSMWA.	8	—	—	20	—	40	—
		Obtain funding and update buildings at field headquarters at Duhig Road.	60	—	40	10	—	32	20
	FM Goal 3: Minimize potential contamination risks from ground disturbing activities.	Prior to implementation of any specific project involving ground disturbance, DFG would assess of potential hazardous materials to be encountered, such as through the preparation of an Initial Site Assessment.	20	12	12	12	16	—	24
Administrative Element									
Administrative	ADMIN Goal 1: Maintain current data on the management and resources at NSMWA	Maintain financial records regarding expenditures, staff, maintenance, and other administrative duties.	20	60	40	—	—	—	—
		Consolidate geographic data and develop a geographic information system (GIS).	8	—	—	20	32	—	20
		Develop and maintain a database of monitoring data, management activities, permits and MOUs (e.g., weed management actions) implemented and outcomes and regulatory permits or MOUs received (old or active) from other resource agencies (e.g., BCDC, RWQCB, ACOE).	8	—	—	20	20	—	12

Table 6-1. Operations and Maintenance Requirements (hours by staff position) to Implement Plan

Element	Goal	Tasks	Sr Bio Supv WL	Assoc WL Bio	WL Hab Supv	Fish WL Tech	WL Bio	Tract Oper/ Labr	Fish WL Hab Asst
Scientific Research and Monitoring Element									
Scientific Research and Monitoring	SRM Goal 1: Improve understanding of ecosystem processes and trends, and evaluate the implementation, effectiveness and validity of management actions in the NSMWA through an effective monitoring program. Use the information obtained to adjust management strategies as appropriate.	Conduct baseline and follow-up biological monitoring for planned restoration projects in the NSMWA. This may include monitoring fish (see aquatic ecosystem goals), aquatic invertebrates, avian, plant and water quality response to management actions.	8	—	16	—	40	—	20
		Define monitoring to support evaluation of project goals and objectives and inform adaptive management.	8	—	8	—	16	—	8
		Adopt monitoring design that will include data collection that is self-sustaining when possible (e.g., equipment with automatic data recording) and minimize operations and maintenance as much as possible.	8	—	8	—	4	—	—
		Integrate site-specific monitoring efforts with regional monitoring programs (e.g., California Rapid Assessment Method [CRAM], Integrated Regional Wetland Monitoring [IRWM]).	16	8	—	—	8	—	—
		Require researcher to provide electronic version of study results and link to Management Units' GIS.	8	—	8	—	—	—	8
		Conduct plant, wildlife, aquatic, invertebrate, and fisheries inventories of the NSMWA	8	20	72	—	80	—	20
	SRM Goal 2: Encourage and support scientific research that fosters the scientific understanding needed to protect and enhance resources of the NSMWA, and contributes to adaptive management strategies.	Utilize DFG's January 2008 Science Policy in the planning, approval and management of scientific research conducted in the NSMWA by DFG staff and outside entities (includes recommendation of scientific oversight, scientific staff development and classification and data management).	32	12	12	—	—	—	8
		Develop a prioritized list of research needs.	16	8	8	—	—	—	—
		Coordinate with local education institutes or universities to conduct research studies that would provide needed data for guiding management decisions.	30	8	8	—	—	—	—
		Require researchers to provide copies of data and/or published papers, and contact researchers to ensure that this requirement is fulfilled.	20	8	8	—	—	—	—
		Create an electronic database of scientific research conducted in the NSMWA.	20	8	8	—	—	—	—

Table 6-1. Operations and Maintenance Requirements (hours by staff position) to Implement Plan

Element	Goal	Tasks	Sr Bio Supv WL	Assoc WL Bio	WL Hab Supv	Fish WL Tech	WL Bio	Tract Oper/ Labr	Fish WL Hab Asst
Management Coordination Element									
Management Coordination	MC Goal 1: Coordinate with federal, state, and local agencies regarding plans and projects that may affect habitats and/or management at the NSMWA	Review, coordinate, and provide comments and recommendations on federal, state and local government plans and proposed projects as appropriate for the purpose of determining the consistency of such plans with the goals of this LMP.	40	8	8	—	16	—	8
		Work with local mosquito control districts (Napa, Sonoma, and Solano County) to monitor potential mosquito breeding sites and apply treatments as needed.	32	—	—	—	16	—	—
		Apply for grants and matching funds with mosquito abatement district to implement BMPs.	72	16	16	—	—	—	8

Sr Bio Supv WL = Senior Biologist Supervisor (Wildlife)
Assoc WL Abio = Associate Wildlife Biologist
WL Hab Supv = Wildlife Habitat Supervisor
Fish WL Tech = Fish and Wildlife Technician
WL Bio = Wildlife Biologist
Tract Oper/Labr = Tractor Operator/Laborer
Fish WL Hab Asst = Fish and Wildlife Habitat Assistant